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EXAMINER

LUGO, DAVID B

ART UNIT PAPER NUMBER

2634

DATE MAILED: 04/22/2004

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/763,371

Applicant(s)

LAAMANEN ET AL.

Examiner

David B. Lugo

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-14 is/are rejected.
- 7) ☒ Claim(s) 1-7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Drawings

1. Figures 1-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The abstract of the disclosure is objected to because in the last line, "(Fig. 5)" should be deleted. Correction is required. See MPEP § 608.01(b).
3. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (d) BRIEF SUMMARY OF THE INVENTION.
- (e) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (f) DETAILED DESCRIPTION OF THE INVENTION.
- (g) CLAIM OR CLAIMS (commencing on a separate sheet).
- (h) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

Claim Objections

4. Claims 1-14 are objected to because of the following informalities:
- a. In the first line of claims 1-7, "Method" should be --A method--.
 - b. Claim 1, line 1, "the transmission bandwidth" should be --transmission bandwidth-- (see also claim 8, line 1).
 - c. Claim 1, line 2, "based on multicarrier modulation technique" should be --based on a multicarrier modulation technique--.
 - d. Claim 1, line 5, "the highest probability" should be --a highest probability-- (see also claim 8, line 4).
 - e. Claim 2, line 2, "the frequency range" should be --a frequency range-- (see also claim 9, line 2).
 - f. In claim 3, the following limitations lack proper antecedent basis in the claim: "the equalizers" (lines 2-3), "the adaptive filters" (line 3), "the longest temporal length" (line 4), "the number of their tap coefficients" (line 4), and "the spot frequencies" (line 7) (see also claim 10, lines 2-7).
 - g. Claim 3, line 4, "their tap coefficients" should be --tap coefficients-- (see also claim 10, line 4).
 - h. Claim 3, line 4, "those subchannels" should be --subchannels-- (see also claim 10, line 5).
 - i. Claim 4, lines 3-4, "said frequency range of 90 kHz – 3.6 MHz" lacks proper antecedent basis in the claim (see also claim 11, lines 3-4).
 - j. Claim 4, line 4, "the number of" should be --a number of-- (see also claim 11, line 4).

- k. Claim 5, line 1, "the allocation" should be --allocation-- (see also claim 12, line 1).
- l. Claim 5, lines 2-3, it is unclear what is specified by "arranged modifiable case by case", and this limitation should be clarified (see also claim 12, lines 2-3).
- m. Claim 6, line 2, "the operation" should be --operation-- (see also claim 13, line 2).
- n. Claim 6, line 3, "the allocation of the available computing capacity" should be --allocation of available computing capacity-- (see also claim 13, line 3).
- o. Claim 6, line 4, "the quality" should be --quality-- (see also claim 13, line 4).
- p. In claim 6, the following limitations lack proper antecedent basis in the claim: "the system" (line 1) and "the modem" (line 2) (see also claim 13, lines 1 and 2).
Further, it is unclear which coefficients are being referred to by "said number of tap coefficients", recited in line 4, as "number of tap coefficients" is recited in claim 3 with reference to subchannels (2) placed on frequency bands (5), and also in claim 4 with reference to subchannels placed at other points of the spectrum (see also claim 13, line 4).
- q. The dependency of claim 7 should be corrected.
- r. Claim 7, line 1, "the criterion" should be --a criterion-- (see also claim 14, line 1).
- s. Claim 7, line 2, "the ratio" should be --a ratio-- (see also claim 14, line 2).
- t. Claim 7, line 2, "the spacing" should be --spacing--.
- u. Claim 8, line 1, "Multicarrier" should be --A multicarrier--.
- v. In the first line of claims 9-14, "System" should be --A system--.
- w. Claim 14, line 2, "the distance" should be --distance--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 8-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claims 8-14 are drawn to a multicarrier communication system, but do not recite any components or structure included in the system, and therefore do not clearly define a multicarrier communication system. The Examiner suggests that the claims be amended to include appropriate circuitry and structure.

Allowable Subject Matter

8. Claims 1-7 would be allowable if rewritten or amended to overcome the objections set forth in this Office action.

9. Claims 8-14 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

10. The following is a statement of reasons for the indication of allowable subject matter:

Lindholm U.S. Patent 6,477,207 discloses a multicarrier transmission system comprising subbands of differing frequencies allocated according to radio interference, but does not disclose dividing the transmission bandwidth into at least three subchannels, here the bandwidth of the subchannels at frequency ranges affected at a highest probability of RF interference at frequencies not known a priori is set narrower than the bandwidth of other subchannels, where the number of narrower-bandwidth subchannels is at least two.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David B. Lugo** whose telephone number is **(703) 305-0954**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Stephen Chin**, can be reached at **(703) 305-4714**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

P.O. Box 1450

Alexandria, VA 22313-1450

or faxed to:

(703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

dl
4/14/04


YOUNG T. TSE
PRIMARY EXAMINER